

Area of impact: Arts, entertainment and leisure

4. Sarah Warner has started to learn the guitar as a leisure activity. Unable to find a local teacher, Sarah searches the Internet and makes contact with Carlos Martinez, a music teacher in Paraguay who is offering his services online. Carlos is using a new three-dimensional (3D) web cam and broadcasting on *Skype*, an audio/videoconferencing program, to teach guitar lessons. He has a *Minoru* 3D web cam which connects to his personal computer's (PC) USB port, just like any other web cam. Carlos can log into his *Skype* account and broadcast his lessons to students online. His students can ask questions and Carlos can comment on their guitar playing in real-time through *Skype*.

The *Minoru* 3D web cam is a single piece of hardware with two cameras spaced approximately the same distance apart as human eyes, which make the user tend to look into the eyes of the camera. The *Minoru* 3D web cam can be used for videoconferencing with programs such as *Windows Live Messenger* and *Skype*. It can record 3D videos for posting on video web sites. It can also be used as a normal web cam, recording video or taking still pictures.



Carlos has had to install *Skype* and the software supporting the *Minoru* 3D web cam.

Students such as Sarah only need to purchase special coloured glasses in order to view the lessons in 3D. She also needs to purchase a basic web cam and install *Skype* in order for Carlos to see and hear her play her guitar.



[Source: www.minoru3d.com. Used with permission.]

(This question continues on the following page)

(Question 4 continued)

- (a) Identify **two** hardware requirements that are needed by the student on their computer in order to watch these 3D videos online. *[2 marks]*
- (b) Sarah’s guitar lessons with Carlos are carried out in real-time via videoconferencing.
- (i) Define the term *videoconferencing*. *[2 marks]*
- (ii) Describe **one** technical limitation in using real-time videoconferencing. *[2 marks]*
- (c) Carlos wants to upload his pre-recorded videos to an online video hosting site such as *YouTube*, but he has no idea how to do this. Explain **two** IT-based strategies that he could use to learn how this is done. *[4 marks]*
- (d) In recent years, advances in 3D technology and significant increases in the processing capability of computers have seen greater numbers of people adopting these technologies.

To what extent do you agree with the statement that “the development of interactive online learning environments will never satisfactorily replace face-to-face contact”?

[10 marks]